

WHAT IS CLAIMED IS:

1. A method for determining canine PepT1-transportability of a peptide comprising:
  - (a) providing an immortalized kidney distal tubule epithelial (Madin-Darby Canine Kidney (MDCK)) cell and a peptide having about 2 to about 4 amino acids, and
  - (b) determining the amount of the peptide transported into the cell, wherein the amount correlates with the canine PepT1-transportability of the peptide.
2. A method for identifying a peptide with a beneficial nutritional property for an animal comprising:
  - (a) providing an immortalized kidney distal tubule epithelial (Madin-Darby Canine Kidney (MDCK)) cell and a peptide having about 2 to about 4 amino acids, and
  - (b) determining the amount of the peptide transported into the cell, wherein the amount correlates with the beneficial nutritional property.
3. The method of claims 1 or 2, which further comprises the step of incubating the MDCK cell in medium containing lactalbumin hydrolysate prior to determining the amount of peptide transport into the cell.
4. The method claims 1 or 2, wherein the peptide is a dipeptide, tripeptide, or tetrapeptide.
5. The method claims 1 or 2, wherein the cell is in medium at a pH of between about 5 and 8.

6. The method of claims 1 or 2, wherein the peptide is present in a concentration of about 10 nM to about 50 mM.
7. A dietary composition for an animal comprising a peptide identified by the method of claims 1 or 2.
8. The composition of claim 7, wherein the peptide is a dipeptide, tripeptide, or tetrapeptide.
9. A dietary composition comprising at least about 10 nm of dipeptide, tripeptide, or tetrapeptide identified by the method claims 1 or 2.
10. A process for altering the absorption of essential amino acids in an animal comprising the steps of:
- (a) feeding the animal a diet containing the composition of claim 9; and
  - (b) maintaining the animal on the diet for a sufficient period of time to allow the composition to be absorbed by the digestive system of the animal.
11. The process of claim 10, wherein the animal is a dog.
12. The process of claim 10 in which the diet comprises about 20 to about 30% crude protein, about 10 to about 20% fat, and about 3 to about 10% dietary fiber.
13. A method of stimulating H<sup>+</sup>-dependent peptide transport in cells comprising contacting the cells (*in vitro* or *in vivo*) with a PepT1 substrate.
14. The method of claim 13, wherein the PepT1 substrate is GlySar or carnosine.
15. The method of claims 13, wherein the PepT1 substrate is GlySar.

16. The method of claims 13, wherein the PepT1 substrate is carnosine.
17. The method of claim 13, wherein the PepT1 substrate is a peptide identified in claims 1 or 2.
18. The method of claim 13, wherein the contacting is carried out by administering the PepT1 substrate to an animal.
19. A composition comprising an isolated nucleic acid encoding, or complementary to, a canine PepT1.
20. The composition of claim 19, wherein the nucleic acid is DNA.
21. The composition of claim 19 that hybridizes under moderate hybridization conditions to any one of SEQ ID NOS:7-9 or 20, or the complement thereof.
22. The composition of claim 19 that hybridizes under stringent hybridization conditions to any one of SEQ ID NOS:7-9 or 20, or the complement thereof.
23. The composition of claim 19, wherein the nucleic acid is SEQ ID NO:7-9 or 20.
24. The composition of claim 19, wherein the nucleic acid is RNA.
25. A peptide having an amino acid sequence encoded by the nucleic acid of SEQ ID NO:7-9 or 20.
26. A peptide having an amino acid sequence encoded by SEQ ID NO:13 or SEQ ID NO:21.